

## Hungarian section I.

**Date:** October 12, 1996

**Country:** Hungary

**Name of Wetland:** Upper Tisa<sup>1</sup> between Vásárosnamény and Tiszabecs

**Geographical Coordinates:** 48° 06' 08'' N 22° 35' 20'' E (center of the site)

**Altitude:** 115.9 m at Tiszabecs and 102.3 m at Vásárosnamény (average: 109.1 m), as compared to the level of the Baltic Sea

**Area:** 5 500 ha

**Overview:** The wetland is a typical floodplain between dikes which were built during the end of the 19th and the first half of the 20th centuries. The highly natural and near-natural habitats consist of large patches of soft wood gallery forests (*Salicetum albae-fragilis*) and hard wood gallery forests (*Quercus-Ulmetum*), oxbow lakes, filled-up meanders with rich natural flora and fauna, wild or near-wild orchards and plough-lands. The wetland is natural, without significant disturbance by human activities and it has an important role as an extended “green corridor” in the movement and migration of many plant and animal groups in the region.

**Wetland Type:** M, T, X

**Ramsar Criteria:** 1.c; 2.b; 2.c

**Map of site included?:** see Map

**Name and address of the compiler of this form:**

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**General Location:** Located in the floodplain along River Tisa between the Hungarian-Ukrainian border (744.8 river km) and the confluence with River Szamos (686 river km). The site is located in Szabolcs-Szatmár-Bereg county, with the nearest towns being Fehérgyarmat and Vásárosnamény.

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<sup>1</sup> The Hungarian name of the river is Tisza

**Physical features:** The site is a basin of recent subsidence, made up of fluvial plains. The soil types are mixtures of Holocene fluvial sediments such as fluvial sand, gravel, floodplain mud, freshwater lime mud. The river carries fine gravel with sand in the reach between Tiszabecs and Tivadar. The river has strong meandering and incision characteristics, with a large number of undercut steep banks. Climatically it is a moderately warm region with insufficient precipitation in the growing season, and with moderately dry, cold winters. The average number of hours with sunshine is 1950-2000 per year, the average temperature is 9.5-10 °C, and the average annual rainfall is 600-700 mm. The size of the catchment area is 13,173 km<sup>2</sup>. The average difference between high and low water levels of the river is 8 m. The most intensive flood times are April (snow melting), occasionally June ("green flood" caused by heavy spring rainfall) and between December and January. The lowest water level occurs between August and September.

**Hydrological values:** There are regular and heavy floods, mainly in April, following snow-melting in the catchment area, and the occurrence of heavy floods in June-July and late autumn, caused by intensive precipitation, is not rare either. The average difference between high and low water levels is 485 cm with a maximum of 930 cm. Because of the high risk of flooding, a huge dike system has been constructed in the middle of the 19th century.

The frequency and intensity of floods has an important impact on the condition of oxbow lakes in the flooded area. During the past few decades, there have been dry periods with the water level being lower than the average, and the "washing out" function of the flood could not work properly in the oxbows. As a consequence, eutrophication has been becoming more intense.

**Ecological Features:** The types of habitats and vegetation are closely related to the typical riparian land. Because of river regulations, the size and distribution of these habitats have decreased significantly during the last hundred years. However, in the present situation the remaining fragments of these habitats are able to keep their basic features.

Soft-wood riparian forest (*Salicetum albae-fragilis*): consists of the species *Salix alba*, *Salix fragilis*, *Populus alba*, and *P. nigra*. This habitat is common in this wetland and the number, size and distribution of this habitat have an important role in the general ecological function of the wetland. The following internationally and nationally important typical bird species breed in this habitat: *Egretta garzetta*, *Ardeola ralloides*, *Nycticorax nycticorax*, *Ardea cinerea*, *Ciconia nigra*, *Milvus migrans*, *Luscinia luscinia*.

Willow bushes (*Salicetum triandrae*): consist of *Salix triandra*, *S. purpurea*, *S. fragilis*, *S. viminalis*.

Hard wood riverside forests (*Querco-Ulmetum*), oxbow lakes, filled-up meanders with rich natural flora and fauna, wild or near-wild orchards.

**Noteworthy flora:** The most important values in the flora are natural soft-wood forests (*Salicetum albae-fragilis*) and hard-wood (*Querceto Fraxinetum-Ulmetum*) riparian forests, whose size and numbers provide ample opportunity for the

survival of its original flora and fauna and for the natural re-colonization of the surrounding artificially altered areas in the flood zone.

*Protected plant species in the area:*

Salix eleagnos  
Iris pseudacorus  
Leucojum aestivum  
Leucanthemum serotinum  
Nymphaea alba  
Salvia natans  
Nymphoides peltata

**Noteworthy fauna:** Because of the lack of extensive biological investigation in this area, we presently have proper data for the avifauna only.

Crex crex, 2-10 pairs in the grassland habitats

Ciconia nigra, 2-5 pairs

Pernis apivorus, 2-5 pairs

Milvus migrans, 1-2 pairs

Ardea ralloides, 3-5 pairs

Egretta garzetta, 15-30 pairs

Nycticorax nycticorax, 45-50 pairs

Coracias garrulus, 4-5 pairs

Luscinia luscinia, 6-8 pairs

Columba oenas, 4-5 pairs

Alcedo atthis, 30-40 pairs

Riparia riparia, 200-500 pairs

Corvus corax, 10-20 pairs

**Social and cultural values:** The fish fauna is rich, providing opportunity for traditional fishing. Because of the natural conditions, the area provides a unique opportunity to study both the structure and function of a riverside ecosystem and the ecological and behavioural characteristics of both the populations and the communities of animals and plants in an undisturbed setting.

The area has great importance for environmental education. Because of the presence of large and diverse habitats, there are many options for the hands-on presentation of the structure and function of the ecosystems both to the students and others, using proper methodology and, thus, without causing almost any damage.

**Land Tenure / ownership:**

(a) The ownership structure of the proposed sites is a mixture of state, private and co-operative possessions.

(b) Similarly, the ownership structures of the surrounding areas are state, private and co-operative.

**Current Land Use:**

*Site:*

Forestry, unfortunately with extended plantation of hybrid poplar.

Agriculture, mainly with fast-growing plants because of the intensive and common flooding.

Orchards for which soil and climate are adequate.

Grazing and harvesting of hay

Tourism, canoe trips along the river, sandy beach resorts and related businesses, development of concentrated guest-house areas and village tourism

Hunting (mainly for wild boar, pheasant, ducks and hare)

Fishing

*Surrounding / catchment:*

Forestry, with extended plantation of hybrid poplar.

Agriculture, mainly with fast-growing plants because of the intensive and common flooding.

Orchards for which the soil and climate are adequate.

Grazing and harvesting of hay

Tourism, village tourism

Hunting (mainly for wild boar, pheasant, ducks and hare)

Fishing

**Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land use and development projects:**

The uncontrolled development of guest-houses, beaches and related activities threaten most significantly the previously untouched areas.

The intensity of forest felling has increased since 1990. As a result, the fragmentation of the riverside forest habitats is getting close to a dangerous level for the species living in those habitats.

The proportion of areas with hybrid poplar plantation as compared to naturally growing riverside forests is increasing, resulting in effects similar to those of deforestation.

The increasing volume of treated sewage water and the nutrients it carries pose a potential risk for the river and its streams and oxbows.

Uncontrolled fishing activities in the oxbows, introduction of non-native fish species, overloading, littering and disturbance by anglers.

Growing and uncontrolled tourism along the river and on the beaches result in significant littering and disturbance in the formerly silent and clean habitats.

Areas between the dikes need unique conservation-oriented land management policy in order to achieve effective protection.

Unresolved communal garbage management; no proper dumpsites.

Uncontrolled land management; there are no local and regional development plans with special attention to the requirements of nature conservation.

**Conservation measures taken:** The Szatmár-Bereg Landscape Protection Area, which covers some part of the proposed area between Nagyar and Olcsvaapáti was established in 1982. Now it is evident that the size and distribution of the areas presently protected are not adequate for the effective conservation of riverside habitats. The current protection presents little opportunity for limiting and regulating agricultural, forestry and developmental activities. The Landscape Protection Area is supervised by the Hortobágy National Park.

**Conservation measures proposed but not yet implemented:** The “Alföld Program” of the Hungarian Government has implemented a special sub-program for River Tisza. This originates from the recognition of the essential role of the river in the structure and function of the Hungarian Lowlands and from an understanding of the high ecological values of the river and habitats along it. This program has identified the most important sites along the river with the aim of controlling further developments.

**Current scientific research and facilities:** Currently, there is a scientific research investigation in progress, focusing on the “Environmental changes and evolutionary responses of the migrating birds” by Tibor Szép, Hungarian Ornithological Society (Hungarian Scientific Research Fund (OTKA) # F17709, 1995-1998).

Some studies on Odonata are being conducted by NGOs (Kossuth Lajos University, Debrecen).

HNP management planning for the Szatmár-Bereg LPA

**Current conservation education:** Szabolcs-Szatmár-Bereg county holds a leading role in nature protection education in Hungary. However, in this part of the county there is no significant environmental education. There is no visitor center, nor are there publications and hides related to River Tisa and its habitats, flora and fauna. Although the Szatmár-Bereg Landscape Protection Area has its own visitor center in Fehérgyarmat, in its exhibition it does not focus on the river.

**Current recreation and tourism:** At present, there is very intensive and unfortunately uncontrolled canoe tourism during the summer period crowded, uncontrolled beach tourism in Tivadar and Vásárosnamény, and increasing tourism in various villages developing, but low level village tourism along the river in the summer period

**Jurisdiction:** Hortobágy National Park, 4024 Debrecen, Sumen u. 2.,

**Management authority:** Upper-Tisa Water Management Authority, 4400 Nyíregyháza, Széchenyi u. 19.

### *References*

- Legány, A., Kónya, J., Vértes, I. Data on the Avifauna of the Tisa region in Szatmár-Bereg. *Tiscia* (1977): 12:131-139.
- Szép, T. (1991): A Tisza magyarországi szakaszán fészkelő partifecske (*Riparia riparia* (L.), 1758) állomány eloszlása és egyedszáma. (Number and Distribution of the Hungarian Sand Martin Population Breeding along the Hungarian Reaches of the River Tisza) *Aquila*, 98: 111-124.